THUSARA SARATH

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OBJECTIVE

Seeking a full-time position in the field of computer engineering with an emphasis on software development, embedded systems, image processing, or distributed systems.

TECHNICAL SKILLS

- **Programming:** C/C++, C#, Java, Assembly, VHDL, MATLAB, OS: Linux/Windows
- **Hardware:** ARM Cortex M3, HCS12/9S12, Cyclone II FPGA, Spartan-3E FPGA, Xilinx ISE, µVision
- **Web:** CSS, PHP/HTML, Joomla CMS
- **Relevant Courses:** Operating Systems, Algorithms and Data Structures, Embedded Systems Design, Object-Oriented Design, Computer Architecture and Organization, Advanced Computer Networks, Digital Systems Design

EDUCATION

- Bachelor of Computer Engineering – Ryerson University 2015
- International Baccalaureate (IB) Diploma – Victoria Park Collegiate Institute 2008

EXPERIENCE

FFsplit Streaming Application: *Co-Founder & Lead DirectShow Developer* 2012-2015

- Rapid software development using Bitbucket revision control in C++/C#.
  - Leveraged inter-process communication, DirectX APIs, open-source libraries and code optimization throughout entire development lifecycle.
  - Considerably minimized CPU usage by converting older API code into efficient DirectX code.
  - Created a DirectShow plugin that interfaced with the popular FFMPEG open source library.
  - Added multithreading support to increase software scalability and improve performance on higher end CPUs. (200%+ performance increase).
- Communicated with thousands of end-users and aggregated user feedback to determine areas in need of improvement.

ARM Cortex Media Player: *Hardware Engineering* 2014-2015

- Programmed an ARM Cortex M3 Microcontroller in C and Assembly to interface with multiple peripherals such as buttons, joysticks, and display content on an LCD panel.
- Implemented efficient sprite rendering techniques to speed up the frame rate of LCD content.
- Worked with RTOS capabilities such as threading and task scheduling.

Data Acquisition System: *Hardware Engineering* 2014-2015

- Designed, built, and soldered components onto a 9S12 microcontroller board.
- Interpreted raw data from sensors using both real-time calculations and look-up tables.
  - Worked with A/D conversion, system interrupts, oscilloscopes, input/output pin manipulation.
  - Implemented real-time data processing and graphing using onboard memory and MATLAB.

Digital Systems Design: *Hardware Engineering* 2014-2015

- Used a Spartan-3E FPGA to code a 256 Byte cache controller in VHDL to process read and write requests between a simulated CPU and its RAM. Effectively handled all logic scenario.
- Created a pong game in VHDL and used the FPGA's signal generators to output to a standard VGA Monitor, ensuring all signal timings met VGA specifications.